

Re: Fw: Ra-226 results for 920 S. St. Francis Street 🖺

Michael Beringer to CharlesA Hooper

Cc Randy Schademann

06/02/2009 11:50 AM

History

This message has been replied to.

An excess lifetime cancer risk greater than 1E-04 would justify taking a time-critical removal action.

CharlesA Hooper/R7/USEPA/US

CharlesA Hooper/R7/USEPA/US 06/02/2009 11:46 AM

To Randy Schademann/SUPR/R7/USEPA/US@EPA, Michael Beringer/R7/USEPA/US@EPA

Subject Re: Fw: Ra-226 results for 920 S. St. Francis Street

I guess one of the things we should decide on is whether to include a risk estimate or not? If you really need one I'm getting 1.5E-3 using the 495 pCi/g value, but that's with tweaking some of the defaults in the radiation prg calculator page. If you just use defaults and assume the radium daughters are in secular equilibrium as they should be you'd get a calculated risk of 4.0E-2. Some of the things updated to get that number is no child exposure, only a small amount of fruit and vegetables grown on-site, small area of contamination, etc. Let me know if you want more details. I can also estimate indoor and outdoor worker estimates too using site-specific values.

http://epa-prgs.ornl.gov/radionuclides/

So, I'm guessing that even at 1.5E-3 that the risk is probably serious enough for prudent, protective measures to be taken in the short term rather than waiting for six months or more for the PRP search to fund the clean-up.

Chuck Hooper Radiation Safety Officer US EPA, Region 7 901 North 5th Street Kansas City, Kansas 66101 (913) 551-7271 office Hooper.CharlesA@epa.gov Randy Schademann/SUPR/R7/USEPA/US

> Randy Schademann/SUPR/R7/USE

Beringer/R7/USEPA/US@EPA

PA/US

06/02/2009 10:29 AM

Subject Fw: Ra-226 results for 920 S. St. Francis Street

To CharlesA Hooper/R7/USEPA/US@EPA, Michael

This is from the site we discussed almost a month ago. I'm developing an action memo and I think we discussed placing a sentence or two within that document for a mini health risk assessment.



Randy

---- Forwarded by Randy Schademann/SUPR/R7/USEPA/US on 06/02/2009 10:27 AM -----



"Monnig, Rob" <rob.monnig@ttemi.com> 06/02/2009 10:21 AM

To Randy Schademann/SUPR/R7/USEPA/US@EPA

CC

Subject Ra-226 results for 920 S. St. Francis Street

Randy,

Just got the analytical back for 920 St. St. Francis Street samples. The four samples ranged from 11.3 to 495 pCi/g for Ra-226.

Colin is working on the figure I will have him add the samples results to the figure

Rob Monnig, PE | Chemical Engineer
Direct 816 412 1775 | Main 816 412 1741 | Fax 816 410 1748
rob monnig@ttemi.com

Tetra Tech → Kansas City Operations | 415 Oak Street | Kansas City MO 64106 | www.tetratech.com Complex World, Clear Solutions™



Think Green - Not every email needs to be printed

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Analytical Report - 920 S St Francis pdf



a member of The GEL Group INC



PO Box 30712 Charleston, SC 29417 2040 Savage Road Charleston, SC 29407

P 843.556.8171 F 843.766.1178

www.gel.com

June 01, 2009

Mr. Robert Monnig Tetra Tech EM Inc. 415 Oak Street Kansas City, Missouri 64106

Re: Standard Products -Ra226

Work Order: 229665

Dear Mr Monnig.

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on May 12, 2009. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4297.

Sincerely,

Amanda Rasco Project Manager

Purchase Order 1048525 Enclosures

GEL Chain of Custody and Analytical Request																		
Project #	**Can your cal com for CEL's Sample Accomtones SOD**																	
GEL Quote # GELPOY-030	Charles Will 1 Devr																	
COC Number (1) GEL Work Order Number: 229665 Phone (843) 556-81																		
70 Number																		
Client Name: Tele Tech Phone # 816-412-1775 Sample Analysis Requested (5) (Fill in the number of containers for each test)								iners for each test)										
Project/Site Name. Radium - Standard Products Fex#										< Preservative Type (6)								
Project/Site Name: Radium - Standard Products Fax # Address: Wichita KS Collected by Raket Mannis Send Results To. Cob. Flannis Qt facts. Comments Note: extra sample required for sam Sample ID For composites - indicate start and stop date/time Fax # Comments Note: extra sample required for sam specific QC Send Results To. Cob. Flannis QC Field Sample (Military) Collected by Raket Mannis Send Results To. Cob. Flannis QC Field Sample (Military) For composities - indicate start and stop date/time																		
Collected by Robert Mannis Send Results To. Cob. Monnia @ Harti. com								- T	Radino-226	Aleman	Α. Α.							Comments Note: extra sample is
Annu Colleged Trans						1 -	PSCA Regulated			3	' []	}		- 1	ŀ	-	required for sample	
Sample ID		Collected (Military)	QC Code ^(A)	Fishered G	Sample Matrix (4)	Radiosctiva		1 5	-3		اوق			- }				specific QC
* For composites - indicate start and stop date.		(hàmm)				3	ž	Ĕ	Z	3								
920-01 0-6"	DEN-05/01/99	0935	N	16	20	L		1	X									
920-01 6-12"		0945	N	M0	Se		<u>L</u> _	1	x									
920-02 0-6"		0955	Ν	No	50	Ĺ		1	X									
920-02 6-12"		/00 5	N	NO	So			Ī	X						\top			
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		┼		-	 	 -	├	┼─			-	-		+	+	+	+	
				<u> </u>		L											<u> </u>	
TAT Requested Normal Rush S	pectfy (Subject to Surch	arre) Fax Re	suits:	Yes		<u>(</u>)	>	-	ırcle D	eliveral	ble C	of A	/ OC	Summ	rv /	Level 1	/ ie	vel 2 / Iouel 3 / Iouel 4
TAT Requested Normal V Rush: Specify (Subject to Surcharge) Fax Results: Yes / (No) Circle Deliverable C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4 Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards Sample Collection Time Zone																		
Contern Beaufic																		
Insilu gama reding with Ludlum 2x2 prole: 50-300 kcpM Control Other																		
Chain of Custody Signatures Sample Shipping									and l	_								
Relanquished By (Signed) Date Tim	,	rigned)	Date	Tune			GEL	. PM	A.	Man								
Received by (signed) Date Time Received by (signed) Date Time GEL PM Amanda Rasco Method of Shipment FUEx Date								ate Sh	прред	5/11	1/09							
2 Rel Martin # Autoil #																		
3 5/12/09 0845 Arrbill#																		
1) Chain of Custody Number = Client Determined For Lab Receiving Use Only																		
2) QC Coost N = Normal Sample, 16 = 1 ftp Drant, FU = Free Dulpiness Blank, 46 = Equipment Blank, 46 = Matrix Spite Sample, 5 = Orab, C = Composite																		
 Field Filtered For liquid matrices, indicate with a - Y - for Matrix Codes DW=Drinking Water, GW=Groundwater, 5 	SW=Surface Water, WW-Waste Wa	ter, W=Water, A	Æ,=Mısc	Laquid, SO						lid Wast	e, O=Oıl	i, F-Fıh	ier, P=W	ipe, U=L	nne, P	Fecal, N	<u> </u>	Custody Seal Intact? YES NO
5) Sample Analyzes Requested Analytical method requested (i = \$260B, 6010B/7499A) and number of containers provided for each (i = \$260B - 3, 6010B/7470A - 1) 6) Preservative Type HA = Hydrochlonic Acid, NI = Ninc Acid, SH = Sodium Hydroxide, SA = Sulfanc Acid, AA = Ascorbic Acid, HX = Hexane, ST = Sodium Thiosulfate, if no preservative is added ~ leave field blank									Cooler Temp 20 C									



SAMPLE RECEIPT & REVIEW FORM

Clien	" TETR			SDG/ARCOC/Work Order: 229665							
Recei	ved By: Ricky Albee			Date Received: 5/13/09							
				Counts > x2 area background on samples not marked "radioactive", contact Radiation Safety Group of further investigation.							
COC/Samples marked as radioactive?		V		Maximum Counts Observed*: 4400 gm, "0. 5 Renth-							
	fied Radioactive II or III by RSO?		<u>\</u>								
	Samples marked containing PCBs?		/	Y 101 01 1 7 YEAR							
	ed as a DOT Hazardous?	~		Hazard Class Shipped: 7 UN#: 2910							
Samp	es identified as Foreign Soil?	<u> </u>	<u>'</u>								
	Sample Receipt Criteria	Υes	NA	Comments/Qualiflers (Required for Non-Conforming Items)							
1	Shipping containers received intact and sealed?	1		Circle Applicable seals broken darnaged container leaking container other (describe)							
2	Samples requiring cold preservation within $0 \le 6$ deg. C?		\	Preservation Method. 1ce bags blue ice dry ice other (describe)							
3	Chain of custody documents included with shipment?	1									
4	Sample containers intact and sealed?	V		Circle Applicable: seals broken damaged container leaking container other (describe)							
5	Samples requiring chemical preservation at proper pH?		~	Sample ID's, containers affected and observed pH: If Preservation added, Lot#:							
6	VOA vials free of headspace (defined as < 6mm bubble)?		~	Sample ID's and containers affected:							
7	Are Encore containers present?			(If yes, immediately deliver to Volatiles laboratory)							
8	Samples received within holding time?	/		Id's and tests affected:							
	Sample ID's on COC match ID's on bottles?	/		Sample ID's and containers affected:							
10	Date & time on COC match date & time on bottles?	~	-	Sample ID's affected:							
11	Number of containers received match number indicated on COC?	~		Sample ID's affected:							
12	COC form is properly signed in relinquished/received sections?	V									
Comm	Fedta 8682 18			8A Date 5/13/08							
	PM (or PMA) review: Initia	ls		RA Date							

PM (or PMA) review: Initials _____Page 3 of 11

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Certificate of Analysis Report for

TETR027 Tetra Tech Missouri Project Client SDG: 229665 GEL Work Order: 229665

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the detection limit

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Amanda Rasco.

Amon La Thomas Reviewed by

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Certificate of Analysis

Company

Tetra Tech EM Inc

Address.

415 Oak Street

Kansas City, Missouri 64106

Contact:

Mr Robert Monnig

Project

Standard Products -Ra226

Client Sample ID: Sample ID:

920-01 0-6"

229665001

12-MAY-09

Uncertainty

Soil

Matrix. Collect Date. Receive Date:

Qualifier

05-MAY-09 09:35

Collector:

Client

Parameter Rad Gamma Spec Analysis

Gamma, Ra226, Solid "Dry Weight Corrected"

Radium-226

11.3 +/-0.829

Result

0.0695

DL

0.500

RL

pC1/g

Units

Project:

Client ID:

MJH1 05/25/09 1623 867489

Time Batch Method

Report Date. June 1, 2009

TETR02701 TETR027

AnalystDate

The following Prep Methods were performed

Method Description Analyst Date Time **Prep Batch** 05/14/09 Dry Soil Prep Dry Soil Prep GL-RAD-A-021 CXCI 0833 866847

The following Analytical Methods were performed

Method Description **Analyst Comments** ı

EML HASL 300, 4 5.2 3

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Certificate of Analysis

Company

Tetra Tech EM Inc.

Address:

415 Oak Street

Kansas City, Missouri 64106

Contact:

Mr Robert Monnig

Project

Standard Products - Ra226

Client Sample ID:

Sample ID Matrix:

920-01 6-12"

229665002

Soil

Collect Date: Receive Date:

05-MAY-09 09:45 12-MAY-09

Collector:

Client

Parameter Qualifier Result Uncertainty DL RL Units DF AnalystDate Time Batch Method

Rad Gamma Spec Analysis

Gamma, Ra226, Solid "Dry Weight Corrected"

Radium-226

+/-4 24 0.112 0.500

pCı/g

Project. Client ID

MJH1 05/25/09 1623 867489

Report Date June 1, 2009

TETR02701

TETR027

The following Prep Methods were performed

Method Description Analyst Date Time **Prep Batch** CXCI Dry Soil Prep Dry Soil Prep GL-RAD-A-021 05/14/09 0833 866847

The following Analytical Methods were performed

Analyst Comments Method Description ï

EML HASL 300, 4.5.2 3

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Certificate of Analysis

Company:

Tetra Tech EM Inc.

Address .

415 Oak Street

Kansas City, Missouri 64106

Contact

Mr. Robert Monnig

Project

Standard Products -Ra226

Client Sample ID.

Sample ID:

920-02 0-6" 229665003

Matrix:

Soil

Collect Date. Receive Date: 05-MAY-09 09:55 12-MAY-09

Collector:

Client

Parameter Result Qualifier Uncertainty DL RLUnits DF AnalystDate Time Batch Method

0.500

Rad Gamma Spec Analysis

Gamma, Ra226, Solid "Dry Weight Corrected"

Radium-226

+/-396 495

0.815

pCı/g

Project. Client ID:

MJH1 05/26/09 0632 867489

Report Date: June 1, 2009

TETR02701 TETR027

The following Prep Methods were performed

Description Method Analyst Date Time **Prep Batch** Dry Soil Prep Dry Soil Prep GL-RAD-A-021 CXCI 05/14/09 0833 866847

The following Analytical Methods were performed

Analyst Comments Method Description

EML HASL 300, 4.5.2.3

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Certificate of Analysis

Company: Tetra Tech EM Inc

Address: 415 Oak Street

Kansas City, Missouri 64106

Contact. Mr. Robert Monnig

Project. Standard Products -Ra226

Client Sample ID.

Sample ID:

Matrix: Collect Date: Receive Date: Soil 05-MAY-09 10:05 12-MAY-09

920-02 6-12"

229665004

Collector:

Client

Parameter Qualifier Result Uncertainty DL RL Units DF AnalystDate Time Batch Method

Rad Gamma Spec Analysis

Gamma, Ra226, Solid "Dry Weight Corrected"

Radium-226 271

271 +/-21 3 0 614 0.500 pCi/g MJH1 05/26/09 0633 867489

Report Date: June 1, 2009

TETR02701

TETR027

Project:

Client ID.

The following Prep Methods were performed

 Method
 Description
 Analyst
 Date
 Time
 Prep Batch

 Dry Soil Prep
 Dry Soil Prep GL-RAD-A-021
 CXC1
 05/14/09
 0833
 866847

The following Analytical Methods were performed

Method Description Analyst Comments

EML HASL 300, 4 5 2 3

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel com

QC Summary

Report Date: June 1, 2009

Page 1 of 2

Contact:

Kansas City, Missouri

Commen

Mr. Robert Monnig

Tetra Tech EM Inc.

415 Oak Street

Workorder:	229665
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Parmname		NOM	Sample Qua	al QC	Units	RPD%	REC%	Range Anist	Date Time
Rud Gamma Spec Batch 867	489								
QC1201838946	229665001	DUP							
Radium-226			11.3	10.1	pCı/g	11.0		(0% - 20%) MJH1	05/26/09 06 36
			+/-0.829	+/-0 918					
QC1201838947	LCS								
Americium-241		163		14.6	pCi/g		89 5	(75%-125%)	05/26/09 06 40
				+/-1 09					
Cesium-137		5 79		6.42	pCı/g		111	(75%-125%)	
				+/-0.579					
Cobalt-60		7 22		7 66	pCı/g		106	(75%-125%)	
				+/-0 630					
Radium-226				0 950	pCı/g			(75%-125%)	
				+/-0,375	, ,			, ,	
QC1201838945	MB								
Radium-226			Į	J 0.023	pCı/g				05/26/09 06 35
				+/-0 0701					

Notes:

The Qualifiers in this report are defined as follows

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded
- J Value is estimated
- M M if above MDC and less than LLD
- M Matrix Related Failure
- N/A RPD or %Recovery limits do not apply
- ND Analyte concentration is not detected above the detection limit
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD

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QC Summary

Workorder: 229665

Page 2 of 2

Parmname NOM Sample Qual QC Units RPD% REC% Range AnIst Date Time

- Ul Gamma Spectroscopy--Uncertain identification
- X Consult Case Narrative. Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry</p>
- h Preparation or preservation holding time was exceeded

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.

- ^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
- * Indicates that a Quality Control parameter was not within specifications

For PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

List of current GEL Certifications as of 01 June 2009

State	Certification							
Arizona	AZ0668							
Arkansas	88-0651							
CLIA	42D0904046							
California – NELAP	01151CA							
Colorado	GEL							
Connecticut	PH-0169							
Dept. of Navy	NFESC 413							
EPA Region 5	WG-15J							
Florida – NELAP	E87156							
Georgia	E87156 (FL/NELAP)							
Georgia DW	967							
Hawaii	N/A							
ISO 17025	2567.01							
Idaho	SC00012							
Illinois – NELAP	200029							
Indiana	C-SC-01							
Kansas – NELAP	E-10332							
Kentucky	90129							
Louisiana – NELAP	03046							
Maryland	270							
Massachusetts	M-SC012							
Nevada	SC00012							
New Jersey - NELAP	SC002							
New Mexico	FL NELAP E87156							
New York - NELAP	11501							
North Carolina	233							
North Carolina DW	45709							
Oklahoma	9904							
Pennsylvania – NELAP	68-00485							
South Carolina	10120001/10120002							
Tennessee	TN 02934							
Texas - NELAP	T104704235-07B-TX							
U.S. Dept of Agriculture	S-52597							
Utah - NELAP	GEL							
Vermont	VT87156							
Virginia	00151							
Washington	C1641							